Ebrahim Karimi

List of Publications by Year
in descending order

116 papers	7,969 citations	76294 40 h-index	48277 88 g-index
122 all docs	122 docs citations	122 times ranked	5173 citing authors

#	Article	IF	Citations
1	Roadmap on structured light. Journal of Optics (United Kingdom), 2017, 19, 013001.	1.0	888
2	Generating optical orbital angular momentum at visible wavelengths using a plasmonic metasurface. Light: Science and Applications, 2014, 3, e167-e167.	7.7	665
3	Spin-to-orbital conversion of the angular momentum of light and its classical and quantum applications. Journal of Optics (United Kingdom), 2011, 13, 064001.	1.0	394
4	4 Ã— 20â€‰â€‰Gbit/s mode division multiplexing over free space using vector modes and a q-plate mode (de)multiplexer. Optics Letters, 2015, 40, 1980.	1.7	372
5	Polarization pattern of vector vortex beams generated by q-plates with different topological charges. Applied Optics, 2012, 51, C1.	0.9	333
6	High-dimensional intracity quantum cryptography with structured photons. Optica, 2017, 4, 1006.	4.8	330
7	Quantum Information Transfer from Spin to Orbital Angular Momentum of Photons. Physical Review Letters, 2009, 103, 013601.	2.9	323
8	Observation of optical polarization MÃ¶bius strips. Science, 2015, 347, 964-966.	6.0	322
9	Hypergeometric-Gaussian modes. Optics Letters, 2007, 32, 3053.	1.7	266
10	Efficient generation and sorting of orbital angular momentum eigenmodes of light by thermally tuned q-plates. Applied Physics Letters, 2009, 94, .	1.5	213
11	Optimal quantum cloning of orbital angular momentum photon qubits through Hongâ€“Ouâ€“Mandel coalescence. Nature Photonics, 2009, 3, 720-723.	15.6	203
12	Geometric phase from Aharonovâ€“Bohm to Pancharatnamâ€“Berry andÂbeyond. Nature Reviews Physics, 2019, 1, 437-449.	11.9	167
13	Generation and dynamics of optical beams with polarization singularities. Optics Express, 2013, 21, 8815.	1.7	157
14	Quantum walks and wavepacket dynamics on a lattice with twisted photons. Science Advances, 2015, 1, e1500087.	4.7	148
15	Spin-orbit hybrid entanglement of photons and quantum contextuality. Physical Review A, 2010, 82, .	1.0	145
16	Reconstructing the topology of optical polarization knots. Nature Physics, 2018, 14, 1079-1082.	6.5	126
17	Controlling the orbital angular momentum of high harmonic vortices. Nature Communications, 2017, 8, 14970.	5.8	124
18	Structured quantum waves. Nature Physics, 2015, 11, 629-634.	6.5	117

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19	Optical spin-to-orbital angular momentum conversion in ultra-thin metasurfaces with arbitrary topological charges. Applied Physics Letters, 2014, 105, .	1.5	116
20	Highly efficient electron vortex beams generated by nanofabricated phase holograms. Applied Physics Letters, 2014, 104, .	1.5	111
21	Spin-to-Orbital Angular Momentum Conversion and Spin-Polarization Filtering in Electron Beams. Physical Review Letters, 2012, 108, 044801.	2.9	97
22	Classical entanglement?. Science, 2015, 350, 1172-1173.	6.0	90
23	Tunable supercontinuum light vector vortex beam generator using a q-plate. Optics Letters, 2013, 38, 5083.	1.7	88
24	Polarization Shaping for Control of Nonlinear Propagation. Physical Review Letters, 2016, 117, 233903.	2.9	87
25	Exploring the quantum nature of the radial degree of freedom of a photon via Hong-Ou-Mandel interference. Physical Review A, 2014, 89, .	1.0	85
26	Two-photon interference: the Hongâ€“Ouâ€“Mandel effect. Reports on Progress in Physics, 2021, 84, 012402.	8.1	83
27	Limitations to the determination of a Laguerreâ€“Gauss spectrum via projective, phase-flattening measurement. Journal of the Optical Society of America B: Optical Physics, 2014, 31, A20.	0.9	82
28	High-dimensional quantum cloning and applications to quantum hacking. Science Advances, 2017, 3, e1601915.	4.7	82
29	Holographic Generation of Highly Twisted Electron Beams. Physical Review Letters, 2015, 114, 034801.	2.9	78
30	Light propagation in a birefringent plate with topological charge. Optics Letters, 2009, 34, 1225.	1.7	71
31	Generation of Nondiffracting Electron Bessel Beams. Physical Review X, 2014, 4, .	2.8	71
32	Measuring the orbital angular momentum spectrum of an electron beam. Nature Communications, 2017, 8, 15536.	5.8	71
33	Measuring the self-healing of the spatially inhomogeneous states of polarization of vector Bessel beams. Journal of Optics (United Kingdom), 2015, 17, 035617.	1.0	64
34	Observation of subluminal twisted light in vacuum. Optica, 2016, 3, 351.	4.8	55
35	Polarization-controlled evolution of light transverse modes and associated Pancharatnam geometric phase in orbital angular momentum. Physical Review A, 2010, 81, .	1.0	53
36	Radial coherent and intelligent states of paraxial wave equation. Optics Letters, 2012, 37, 2484.	1.7	47

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37	Integrated multi vector vortex beam generator. Optics Express, 2013, 21, 16130.	1.7	47
38	Observation of nanoscale magnetic fields using twisted electron beams. Nature Communications, 2017, 8, 689.	5.8	47
39	Arbitrary optical wavefront shaping via spin-to-orbit coupling. Journal of Optics (United Kingdom), 2016, 18, 124002.	1.0	44
40	Quantum cryptography with structured photons through a vortex fiber. Optics Letters, 2018, 43, 4108.	1.7	42
41	Multi-twist polarization ribbon topologies in highly-confined optical fields. New Journal of Physics, 2019, 21, 053020.	1.2	41
42	Generalized optical angular momentum sorter and its application to high-dimensional quantum cryptography. Optics Express, 2017, 25, 19832.	1.7	40
43	â€˜Twistedâ€™ electrons. Contemporary Physics, 2018, 59, 126-144.	0.8	40
44	Time-division multiplexing of the orbital angular momentum of light. Optics Letters, 2012, 37, 127.	1.7	39
45	Generation and application of bessel beams in electron microscopy. Ultramicroscopy, 2016, 166, 48-60.	0.8	39
46	Experimental Demonstration of an Electrostatic Orbital Angular Momentum Sorter for Electron Beams. Physical Review Letters, 2021, 126, 094802.	2.9	39
47	Improved focusing with Hypergeometric-Gaussian type-II optical modes. Optics Express, 2008, 16, 21069.	1.7	38
48	Reconstructing the Poynting vector skew angle and wavefront of optical vortex beams via two-channel moirÃ© deflectometery. Optics Letters, 2013, 38, 887.	1.7	37
49	Real-time imaging of spin-to-orbital angular momentum hybrid remote state preparation. Physical Review A, 2015, 92, .	1.0	37
50	Test of mutually unbiased bases for six-dimensional photonic quantum systems. Scientific Reports, 2013, 3, 2726.	1.6	35
51	Optical framed knots as information carriers. Nature Communications, 2020, 11, 5119.	5.8	34
52	Achromatic orbital angular momentum generator. New Journal of Physics, 2014, 16, 123006.	1.2	33
53	Entanglement: quantum or classical?. Reports on Progress in Physics, 2020, 83, 064001.	8.1	32
54	Investigation of underwater quantum channels in a 30 meter flume tank using structured photons. New Journal of Physics, 2020, 22, 093074.	1.2	31

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55	Twisting neutrons may reveal their internal structure. Nature Physics, 2018, 14, 1-2.	6.5	30
56	Round-robin differential-phase-shift quantum key distribution with twisted photons. Physical Review A, 2018, 98, .	1.0	26
57	Quantum simulation of a spin polarization device in an electron microscope. New Journal of Physics, 2013, 15, 093026.	1.2	25
58	Hong-Ou-Mandel interference of entangled Hermite-Gauss modes. Physical Review A, 2016, 94, .	1.0	25
59	Hardy's paradox tested in the spin-orbit Hilbert space of single photons. Physical Review A, 2014, 89, .	1.0	24
60	Nondestructive Measurement of Orbital Angular Momentum for an Electron Beam. Physical Review Letters, 2016, 117, 154801.	2.9	24
61	Universal unitary gate for single-photon spin-orbit four-dimensional states. Physical Review A, 2009, 80, .	1.0	21
62	Efficient generation and control of different-order orbital angular momentum states for communication links. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2011, 28, 61.	0.8	21
63	Design of electrostatic phase elements for sorting the orbital angular momentum of electrons. Ultramicroscopy, 2020, 208, 112861.	0.8	20
64	General lossless spatial polarization transformations. Journal of Optics (United Kingdom), 2017, 19, 094003.	1.0	19
65	Tighter spots of light with superposed orbital-angular-momentum beams. Physical Review A, 2016, 94, .	1.0	18
66	Generation of electron vortices using nonexact electric fields. Physical Review Research, 2020, 2, .	1.3	18
67	Full-field mode sorter using two optimized phase transformations for high-dimensional quantum cryptography. Journal of Optics (United Kingdom), 2020, 22, 024001.	1.0	17
68	Towards communication in a curved spacetime geometry. Communications Physics, 2021, 4, .	2.0	17
69	Orbital Angular Momentum and Energy Loss Characterization of Plasmonic Excitations in Metallic Nanostructures in TEM. ACS Photonics, 2019, 6, 620-627.	3.2	16
70	Quantifying the impact of proximity error correction on plasmonic metasurfaces [Invited]. Optical Materials Express, 2015, 5, 2798.	1.6	14
71	Generation of a spin-polarized electron beam by multipole magnetic fields. Ultramicroscopy, 2014, 138, 22-27.	0.8	13
72	Achieving Ultimate Noise Tolerance in Quantum Communication. Physical Review Applied, 2021, 15, .	1.5	13

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73	Polychromatic electric field knots. Physical Review Research, 2021, 3, .	1.3	12
74	Quantum process tomography of a high-dimensional quantum communication channel. Quantum - the Open Journal for Quantum Science, 0, 3, 138.	0.0	12
75	Experimental realization of wave-packet dynamics in cyclic quantum walks. Optica, 2019, 6, 174.	4.8	11
76	Quantum probabilities from quantum entanglement: experimentally unpacking the Born rule. New Journal of Physics, 2016, 18, 053013.	1.2	10
77	Experimental ladder proof of Hardy's nonlocality for high-dimensional quantum systems. Physical Review A, 2017, 96, .	1.0	10
78	High-speed imaging of spatiotemporal correlations in Hong-Ou-Mandel interference. Optics Express, 2022, 30, 19456.	1.7	10
79	Violation of Leggett-type inequalities in the spin-orbit degrees of freedom of a single photon. Physical Review A, 2013, 88, .	1.0	9
80	Observation of quantum recoherence of photons by spatial propagation. Scientific Reports, 2015, 5, 15330.	1.6	9
81	Majorana bosonic quasiparticles from twisted photons in free space. Physical Review A, 2021, 103, .	1.0	9
82	Phase retrieval of an electron vortex beam using diffraction holography. Applied Physics Letters, 2017, 111, .	1.5	8
83	Orbital angular momentum resolved electron magnetic chiral dichroism. Physical Review B, 2019, 100, .	1.1	8
84	Laser-induced radial birefringence and spin-to-orbital optical angular momentum conversion in silver-doped glasses. Applied Physics Letters, 2011, 99, .	1.5	7
85	Innovative Phase Plates for Beam Shaping. Microscopy and Microanalysis, 2014, 20, 228-229.	0.2	6
86	Revealing optical vortices with a small number of photons. Laser and Photonics Reviews, 2017, 11, 1600163.	4.4	6
87	Electron holograms encoding amplitude and phase for the generation of arbitrary wavefunctions. Microscopy and Microanalysis, 2015, 21, 503-504.	0.2	5
88	Holograms for the Generation of Vortex States with L=500h Fabricated by Electron Beam Lithography. Microscopy and Microanalysis, 2015, 21, 667-668.	0.2	5
89	Nonlocal quantum erasure of phase objects. Applied Physics Letters, 2019, 115, 051102.	1.5	5
90	Full-mode characterization of correlated photon pairs generated in spontaneous downconversion. Optics Letters, 2021, 46, 2388.	1.7	5

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91	Theoretical and practical aspects of the design and production of synthetic holograms for transmission electron microscopy. Journal of Applied Physics, 2022, 131, .	1.1	5
92	SchrÃ¶dinger equation in a general curved spacetime geometry. International Journal of Modern Physics D, 2022, 31, .	0.9	5
93	Slowly but surely. Nature Physics, 2015, 11, 15-16.	6.5	4
94	Compressed sensing of twisted photons. Optics Express, 2019, 27, 17426.	1.7	4
95	Super-critical phasematching for photon pair generation in structured light modes. Optics Express, 2016, 24, 24495.	1.7	3
96	Dynamical diffraction effects in STEM orbital angular momentum resolved electron energy-loss magnetic chiral dichroism. Physical Review B, 2020, 102, .	1.1	3
97	Experimental observation of subluminal light carrying orbital angular momentum in vacuum. , 2015, , .		2
98	Observation of subluminal twisted light in vacuum: reply. Optica, 2017, 4, 207.	4.8	2
99	Structured quantum projectiles. Physical Review A, 2019, 99, .	1.0	2
100	Experimental tests of multiplicative Bell inequalities and the fundamental role of local correlations. Physical Review Research, 2021, 3, .	1.3	2
101	High-dimensional quantum cloning of orbital angular momentum qudits. , 2016, , .		2
102	Tuning vector vortex in spatially coherent supercontinuum multicolored optical beam using q-plate. Proceedings of SPIE, 2014, , .	0.8	1
103	Structured Electron Beam Illumination: A New Control Over the Electron Probe Weird Probes and New Experiments. Microscopy and Microanalysis, 2015, 21, 25-26.	0.2	1
104	A New Twist on Relativistic Electron Vortices. Physics Magazine, 2017, 10, .	0.1	1
105	Holographically Probing Longitudinal Magnetic Fields with Electron Vortex Beams. Microscopy and Microanalysis, 2018, 24, 938-939.	0.2	1
106	Quantum cryptography with structured photons. , 2021, , 139-176.		1
107	A sorter for electrons based on magnetic elements. Ultramicroscopy, 2021, 231, 113287.	0.8	1
108	Supercontinuum light vector beam generation with a tunable liquid crystal q-plate. , 2013, , .		1

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109	Incoherent polarized white-light vecctor vortex from a q-plate. Proceedings of SPIE, 2014, , .	0.8	0
110	Experiments and Potentialities for the use of Bessel Beam in Superresolution STEM. Microscopy and Microanalysis, 2014, 20, 384-385.	0.2	0
111	Recovery of quantum coherence by spatial propagation. , 2015, , .		0
112	Holographic Generation of Highly Twisted Electron Beams. Microscopy and Microanalysis, 2015, 21, 675-676.	0.2	0
113	Spin-Multislice Applied to the Electron Spin Interaction with Materials. Microscopy and Microanalysis, 2015, 21, 1961-1962.	0.2	0
114	Super-critical phase-matching in nonlinear optics. , 2015, , .		0
115	Dynamics of laser-induced radial birefringence in silver-doped glasses. Optics Letters, 2015, 40, 4062.	1.7	0
116	Direct measurement of the quantum density matrix in the basis of azimuthal angle. , 2015, , .		0